

Attorney Docket No.: 2001P12800US01
Application No. 10/705,795

REMARKS/ARGUMENTS

Claims 24-49 were considered by the Examiner. Claims 24-49 stand rejected. As shown in the previous section, some of the claims have been amended or canceled. For the reasons set forth below, Applicants request reconsideration and allowance of all pending claims.

Section 112 Rejection:

Although the Applicants believe there was enough support for the term "flat" or "substantially flat" at, for example, ¶32 of Applicant's specification, the Applicants decided to cancel claims 26, 33, and 43.

Section 103 Rejections:

Claims 24-49 are rejected under 35 U.S.C. § 103(a) as being obvious over the proposed combination of European Patent Application Publication EP0732868A1 by Nagayama et al. ("*Nagayama*") in view of U.S. Patent Application Publication US 2001/0019133A1 by Konuma ("*Konuma*").

Applicants submit that the combination of the cited references does not disclose or suggest the light-emitting device in claim 24. More specifically, Applicants submit that the combination of the cited references does not disclose or suggest: (1) "poly-siloxane insulating structure separating the electro-luminescent organic layer into a plurality of light-emitting elements", (2) "prior to drying, the organic layer is initially a solution that includes an organic material and a solvent", and (3) "the poly-siloxane insulating structure minimizes the organic material clinging to sides of an aperture." As explained at, for example, column 10, lines 9-58, *Nagayama* discloses a bank structure that is used when the organic material is deposited using vacuum deposition techniques rather than when the organic material is deposited from solution. *Konuma* discloses embedding an insulator (i.e., element 41b) comprised of siloxane between the pixel electrode (i.e., element 40) and the electroluminescent layer (i.e., element 42) in order to prevent a short circuit between the pixel electrode and the cathode (i.e., element 43). *Konuma* does not disclose that the siloxane insulator is used to separate "the electro-luminescent organic layer into a plurality of light-emitting elements" and that "the poly-siloxane insulating structure

Attorney Docket No.: 2001P12800US01
Application No. 10/705,795

minimizes the organic material clinging to sides of an aperture.” Therefore, the combination of the cited references does not disclose or suggest: “a poly-siloxane insulating structure separating the electro-luminescent organic layer into a plurality of light-emitting elements”, “prior to drying, the organic layer is initially a solution that includes an organic material and a solvent”, and “the poly-siloxane insulating structure minimizes the organic material clinging to sides of an aperture.”

Support for the amended portions of claim 24 is provided at, e.g., ¶ 32 of Applicant’s specification. In claim 24, the phrase “minimizes the organic material clinging to sides of an aperture” is functional language and the Examiner should assign patentable weight to the functional language. See, e.g., In re Mills, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990).

In addition, the Applicants respectfully submit that the Examiner has not provided a suggestion to combine *Nagayama* and *Konuma*. The Examiner has the burden of showing that the cited references provide a suggestion to combine them. *See* MPEP 2142. There is no such motivation to combine the cited references. The polyimide layer (i.e., the bank structure) in *Nagayama* is used to electrically separate pixels. In *Konuma*, the insulating layer comprised of siloxane (i.e., elements 39 and 41b) is used for different purposes. In *Konuma*, the interlayer insulating film (element 39) is used to separate the thin-film transistor (“TFT”) from the OLED. The protection portion (element 41b) is used to separate the pixel electrode from the electroluminescent layer to prevent electrical shorts. Neither element 39 nor element 41b are bank structures. When separating pixels, characteristics of the bank structure such as its wetting behavior (e.g., whether the insulating layer is hydrophilic and thus tends to spread the organic material, or whether the layer is hydrophobic and thus tends to contain the organic material and prevent it from clinging to the sides of the aperture) and curing temperature (e.g., whether the curing temperature of the insulating layer is compatible with the organic materials) are considered. On the other hand, the requirements for the siloxane insulating layer used to separate the TFT from the OLED or to separate the electrode from the electroluminescent layer are less stringent and the wetting behavior and curing temperature are not a determinative factor and thus the types of insulating layers available for use in these areas are greater. Therefore, since the insulating layers used in *Konuma* do not take into consideration the characteristics considered

Attorney Docket No.: 2001P12800US01
Application No. 10/705,795

when forming bank structures as in *Nagayama*, no motivation is provided in these references to combine them.

For at least these reasons, Applicants respectfully request reconsideration and allowance of claim 24. Claims 25-30 depend from claim 24. Accordingly, they are patentable over the combination of the cited references at least for the reasons set forth above with respect to claim 24.

Claim 31 recites "depositing from solution using wet-chemical techniques one or more organic layers into the apertures of the poly-siloxane bank structure" and "the poly-siloxane insulating structure minimizes the organic material clinging to sides of an aperture." For reasons similar to those provided for claim 24, the combination of the cited references does not render claim 31 obvious.

Claims 32-40 depend from claim 31. Accordingly, they are patentable over the combination of the cited references at least for the reasons applicable to claim 24.

Claim 41 recites: (1) "at least one structure comprising poly-siloxane material, wherein the structure is configured to separate elements of the OLED", (2) "prior to drying, the organic layer is initially a solution that includes an organic material and a solvent", (3) "the poly-siloxane structure is non-wetting thus minimizing the organic material clinging to sides of an aperture", and (4) "the poly-siloxane structure has a curing temperature below 250°C." The combination of the cited references does not disclose or suggest that the "the poly-siloxane structure has a curing temperature below 250°C." *Nagayama* and *Konuma* do not even discuss curing the poly-siloxane material. For these reasons and reasons similar to those provided for claim 24, the combination of the cited references does not render claim 41 obvious.

Claims 42-49 depend from claim 41. Accordingly, they are patentable over the combination of the cited references at least for the reasons applicable to claim 41.

Attorney Docket No.: 2001P12800US01
Application No. 10/705,795

Conclusion:

The Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, the Applicants respectfully request allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference call at the convenience of the Examiner.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment to Deposit Account No. 19-2179 of Siemens Corporation.

Date: Dec. 15, 2004

Respectfully requested,

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